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Companion Animal Attachment
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by

Frances L. Howe

A thesis submitted in partial fulfillment of the requirements for the degree of

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Abstract

**Companion Animal Attachment
Its Influence Upon The Emotional Well-Being Of Elders
Living In The Community**

by Frances Lydia Howe

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Department of Psychosocial Nursing

There is a need to identify the meaning of companion animals in daily life and to explore the ways in which the presence of companion animals can affect the health and well-being of elders. The purpose of this study was to explore the extent to which attachment with a companion animal reduces loneliness in community-dwelling elders.

A convenience sample of 81 pet owners was used. The participants completed both the Abbreviated Loneliness Scale (ABLS) and the Lexington Attachment to Pets Scale (LAPS). A Pearson's Product Moment Correlation revealed a weak, positive relationship between loneliness and attachment that was not statistically significant.

A secondary analysis was performed to compare extreme scores of the ABLS as two groups; least lonely and most lonely. The results showed a significant difference in means on the LAPS between the two groups. The more lonely the elder was , the more attached they were to their pet.

Various possibilities were cited as feasible explanations for why the initial research questions were not supported. In addition, other questions of interest were examined.

This study supports the belief that in exploring the relationship between elders and their pets, particularly in the arena of pet attachment and well-being, the connection can be multi-faceted and complex.

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A special note of gratitude is extended to my parents and sisters for their love and sustenance. Last but certainly not least, my sincere thanks to my dear friend Kevin Shannahan whose continual patience, support and yes, computer prowess assisted me in achieving this goal.

DEDICATION

What is man without beasts? If the beasts were gone, men would die from great loneliness of spirit, for whatever happens to the beast also happens to man. All things are connected. Whatever befalls the Earth befalls the sons of Earth. ____

Chief Sealth, Duwanish Tribe, State of Washington, Letter to the U.S. President, 1855.

This thesis is dedicated with love, affection and respect to all the animals I have been fortunate enough to share my life with.

Chapter 1

INTRODUCTION

The use of animals in beneficial association with humans dates back to around 500,000 years ago; with the earliest reported associations between Peking man and a wolf like canid (Messent & Serpell, 1981). Particularly strong evidence for the early pet-human relationship can be formulated from fossil findings of mummified puppy remains that were deliberately buried with human remains (Stanley, 1972).

Today it is known that humans and animals develop a powerful bond, the roots of which reach back thousands of years and extend into the present in relatively undiminished form (Bustad, 1984). Levinson (1972) states "we need animals as allies to reinforce our inner selves", and further, that "we must revive our intimate associations with nature and it's animals if we are to survive as the dominant species on earth" (Levinson, 1972, p. 29).

Elders compose the fastest growing population in this society. It is projected that in the year 2020, 30% of the United States population will be 65 years of age and older (Lewis, 1990).

Elderly people, in general, encounter many problems and hardships. Corson and Corson (1981) see the aged systematically excluded from the mainstream of social, cultural, and economic life in Western societies. As one ages, the individual is less likely to be married, to be in touch with relatives and friends, and to be involved in more than just a few social relationships. These conditions are brought about through the death of others, physical movement away

from the individual, and changes in personality factors (Peretti, 1983). Such changes make it very difficult for the elderly to cultivate the kinds of intimate relationships so necessary in human life satisfaction (Tobin & Neugarten, 1961; Van, 1978).

Pets often become a constant source of companionship and satisfaction for the elderly when human relationships are limited (Fogle, 1981). Dogs tend to be the most frequently chosen pets and they live in close contact with their owners (Bustad, 1980). The affiliations which develop through this association tend to be personal, caring, affectionate and intimate (Sussman, 1985).

Among the elderly, the emotional and social involvement with the animals can be as great or greater than they might have been with other human beings (Cusack & Smith, 1984; Peretti, 1988). These forms of involvement give meaningful interaction to the relationship and help to maximize the lives of the elderly (Beck & Katcher, 1983).

Currently, the human- companion animal bond is receiving attention from a variety of disciplines including psychology, sociology, animal science and nursing. Attention has been focused on potential health benefits of a companion animal relationship in diverse populations such as disturbed children, the mentally ill and the elderly. Several investigators have demonstrated health benefits derived from companion animals utilized in a variety of applications and a variety of settings (Brickel, 1980-81; Corson & Corson, 1978; & Levinson, 1968, 1972). Companion animals are being utilized to facilitate psychotherapy (animal assisted therapy) and to effect socialization through pet visitation programs. Animal assisted programs are purported to deliver a variety of health benefits including

feelings of ego mastery, increased interaction with people, increased physical activity, decreased death anxiety, increased interest in learning, decreased reminiscence, decreased loneliness and retardation of the process of devolution and senility (Levinson, 1972).

These pet related benefits can be viewed as an opportunity to intervene with problems most commonly seen with aging. Losses experienced by the elderly from physical, social, and psychological perspectives, create unique opportunities to utilize the reported health benefits of companion animals.

Statement of the Problem

The intent of this study is to explore the relationship between companion animals and their elder owners and to ascertain whether or not this relationship has an affect on the elder owners emotional well-being. The literature recognizes the need for a number of exploratory/descriptive studies to develop a conceptual framework before attempting more complex studies (Davis & Juhasz, 1984; Robb & Stegman, 1983). As stated by Robb and Stegman (1983):

If association with companion animals on the part of humans yields benefits for humans and if the benefits are sufficient to justify changes in policies, rules, and regulations that prohibit animals in many settings within this country, researchers seeking to document their benefits probably have a number of exploratory/descriptive studies to conduct before more controlled investigations can be justified (p. 281).

Large scale epidemiological studies of associations between people and pets often fail to reveal expected relationships. We need to have realistic expectations of the benefits of companion animals given the number of other interacting social and behavioral risk factors that impinge on the health and functioning of elders. There is a need to identify the meaning of companion animals in daily life and to explore the ways in which the presence of companion animals can affect the health and well-being of elders.

This study was designed to answer the following questions:

1. Among pet owners, is there a relationship between attachment to companion animals and loneliness?
2. Are there intervening factors such as gender, partnership, ethnic identity and education which mediate the relationship between companion animals and loneliness?

Purpose of the Study

The purpose of this study is to explore the extent to which attachment with a companion animal in the environment reduces loneliness in community-dwelling elders. In addition, the study will also address possible intervening factors i.e. gender, partnership, and social support.

Significance of the Study

Nurses have been eager to monitor needs, behavior, and outcomes of human-animal interaction, especially in many types of clinical settings, but have had little theoretic support for its use as a therapeutic intervention (Carmack, 1991). This study based on a strong theoretical framework, could positively impact clinical practice and validate human-animal interaction as a therapeutic intervention. Much of nursing's role is directed toward preventing illness and promoting health. For each goal toward which this role is directed, the human-animal bond can be incorporated into the nursing care plan whether in the form of a companion animal with whom one experiences the therapeutic benefits in one's home or through the experience of animal assisted therapy programs.

Nurses, with their extensive contact with clients, have the greatest interest in identifying and understanding interventions for loneliness and its sequela (Robb , Boyd & Pristash, 1980). Nurses are in a position to assess those individuals for whom it is appropriate to include an animal in the nursing care plan intervention and, through the nursing process, follow through on the outcome and evaluation of its effectiveness. This study could encourage nurses to not only take measures to make existing pet programs work but to develop new programs as well.

Definitions

1. **Elder:** a non-institutionalized person over age 60.
2. **Companion animal:** domesticated or tamed animal that is kept as a favorite pet and cared for.
3. **Loneliness:** an experience related to a number of personal characteristics, including low self-esteem, shyness, feelings of alienation, external locus of control, and belief that the world is not a just place (Jones, Freemon & Goswick, 1981). Measured by the subjects score on the Abbreviated Loneliness Scale (ABLS) (Paloutzian & Ellison, 1982).
4. **Human-companion animal bond:** an attachment that can be interpreted as affectionate, friendly, and companionable interaction between a human being and an animal (Messent & Serpell, 1981). Attachment measured by the subject's score on the Lexington Attachment to Pets Scale (LAPS) (Johnson, Garrity & Stallones, 1990).

Chapter 2

CONCEPTUAL ORIENTATION AND SELECTED REVIEW OF THE LITERATURE

Introduction

This chapter presents two key concepts from Roy's (1984) adaptation model of nursing as a conceptual orientation for examining the human-companion animal bond. Aspects of attachment theory (Bowlby, 1980), a discussion on loneliness and a review of the literature relative to the potential health effects of the human animal bond will be presented as well.

Conceptual Framework

Roy's Adaptation Model

According to Roy's adaptation model, the person is ultimately striving for a state of balance or equality between him/herself and the environment. The two key concepts of Roy's (1984) adaptation model that will be utilized in this study are: environmental stimuli as factors influencing adaptation, and interdependence as a mode of response to the environment. Roy (1984) classified environmental stimuli into three categories. A focal stimulus is the degree of change that precipitates an individual's behavior. It may be an environmental change or a change in

relationship. It is the situation that most immediately confronts a person and the one to which the person must make an adaptive response. Contextual stimuli are all other stimuli present in the environment that contribute to the behavior observed. Residual stimuli are the beliefs, attitudes, or traits which have an indeterminate effect on the present situation (Roy, 1984).

In situations of loneliness, focal feelings of alienation or estrangement may occur from a real or imagined loss or separation from others (Brown, 1984). These feelings may result in either reaching out behaviors or behaviors of loneliness (Calvert, 1988). Numerous contextual stimuli may influence the development of loneliness such as physical living conditions, social interaction patterns, developmental stage, and individual expectation in relationships (Brown, 1984). Brown's (1984) idea is applied to this study in that the feeling of alienation can be a focal stimulus for elders living in the community. This feeling is likely to result in the responses of loneliness because of negative contextual stimuli such as poor health and lack of social contact (Calvert, 1988). Attachment to a companion animal may be a positive contextual stimulus that helps to reduce loneliness in elders despite the negative environmental factors to which they are exposed (Calvert, 1988). A companion animal may foster a state of adequacy by promoting exercise, relaxation, and socialization as elements of the adaptive mode.

The second aspect of Roy's (1984) adaptation model for nursing that will be used to guide this study concerns the interdependence mode of adaptation. Roy (1984) classifies a person's responses to the environment into categories or modes of observable behavior. The interdependence mode of response to the environment addresses an individual's support system and patterns of interaction

with others. Tedrow (1984) defined interdependence as "the close relationships of people that involve the willingness and ability to love, respect, and value others, and to accept and respond to love, respect, and value given by others" (p.306). An individual who had achieved interdependence has a reciprocal relationship of love and support with others (Tedrow, 1984).

A significant other in the interdependence mode, may be a parent, spouse, friend, family member, God or a companion animal. The relationship an individual forms with a significant other is instrumental in fulfilling that person's need for affectional adequacy (Tedrow, 1984). This encompasses the person's needs for care and attention, affirmation, approval, belonging, and understanding (Tedrow, 1984).

Interdependent relationships mirror a circular pattern of reciprocal giving and receiving between an individual and significant others (Tedrow, 1984). As applied to this study, attachment to a companion animal may be an important aspect of an elder's interdependence mode of adaptation. As one gives attention and recognition to a companion animal and responds in kind to the nurturing that is received, loneliness may be reduced.

The concepts of Roy's adaptation model of nursing are supported by additional theoretical explanations of human-pet interactions. Glasser (1965) maintains that animals fulfill two basic psychological needs: the need to be loved and the need to feel worthwhile to themselves and others. According to Kidd and Kidd (1989), companion animals can be a less expensive answer to and salvation from the debilitating and deteriorating effects of loneliness and isolation. Their loving presence helps preserve a retired human's sense of identity through the

assurance that such owners are *needed* by another living being (Kidd & Kidd, 1989).

Levinson (1962) proposes that the dependent, non threatening, and innocent nature of pets helps to satisfy a person's inner need for loyalty, trust, and respect. This in turn, promotes emotional health. Frank (1984) states that pets are able to provide close, affectionate relationships to those who yearn for that kind of relationship. Animals may serve as a substitute for human companionship and at times are a person's only link with reality (Frank, 1984).

It is reasonable to conclude, based on the preceding rationale, that elders experiencing a focal stimulus of alienation, who display high levels of attachment with a companion animal, will exhibit less loneliness.

Attachment Theory

Attachment theory as defined by Bowlby (1980) states that "any form of behavior that results in a person attaining or retaining proximity to some other differentiated and preferred individual" (p. 39) is reflective of attachment behavior. Bowlby further defines attachment as "a class of behavior with its own dynamic...conceived as distinct from feeding behavior and sexual behavior and of at least equal significance in human life (1980, p. 39).

As one ages, other attachment figures are sought. Bowlby (1980) does not specifically discuss pets as attachment figures for elders; he does recognize that pets can elicit a strong grief reaction upon their death. This observation has been well documented in the literature (Cowles, 1985; Kay, Fudin & Cohen, 1984;

Peretti, 1990; Quackenbush, 1985). Those persons most vulnerable to grief following the death of a pet are ones whose pets served as a major source of affection, intimacy, companionship, and nurturance (Carmack, 1991; Quackenbush, 1985; & Peretti, 1990).

The link between attachment theory and the human-companion animal bond is made by Rynearson (1978) when he states "human and pet are significant attachment figures for one another... {and}...share complementary attachment because of mutual need and response" (p. 553). Rynearson goes on to say "the animal which the human considers as 'pet' is usually chosen for its innate capacity to display and respond to attachment", and continues by defining the human-companion animal bond as "a dynamic aggregate of behaviors and it is the 'aliveness' of the relationship that appears crucial - a vital, reciprocating balance of attachment" (Rynearson, 1978, p. 551).

The issue of attachment becomes more meaningful when it has some related importance to the physical and mental health status of an individual. We know from research and literature that companion animals can provide pet owners with definite benefits, both physiologic and psychologic, such as companionship, affection, love, nurturance, and a sense of being needed (Beck & Katcher, 1983; Fogle, 1983; Katcher & Friedman, 1980). If pets can mean so much to people whose lives are filled with family, jobs, activity, and social responsibilities (Cain, 1985; Riddick, 1985) it is only reasonable to conclude that companion animals can benefit the elderly, whose lives may be missing much of the quality of environmental stimulus and nurturing.

A classic study conducted by Ory and Goldberg (1983) truly established that a connection does exist between the degree of attachment an individual has with their pet and the influence on that individual's health. In 1983, Ory and Goldberg conducted a study of the relationship between life satisfaction and pet ownership. The purpose of their study was to identify factors related to subjective well-being in elders. They examined pet ownership as an independent predictor of perceived happiness in elderly women. A 1975 county census was utilized to provide data. One question to assess the quality of respondents' pet interactions on a five-point scale from 'very attached' to 'not attached at all' was included in the census data collection questionnaire. The sample included one-thousand seventy-three non-institutionalized Caucasian married women, age sixty-five to seventy-five who lived in rural areas. Initial analysis of the data showed "no significant relationship was found between presence of pets in the household and reported happiness" (p.396). However a significant relationship became apparent between pet ownership characteristics and happiness ($p < 0.05$) (p.397) "when separating pet owners who were very attached to their pets from those who were not very attached".

Other researchers believe that the degree to which an individual is attached to his/her companion animal is an important variable to consider when assessing the effect of that relationship on the individuals' health status. (Friedman, Katcher, Lynch & Thomas, 1980; Katcher, 1982). Friedman et al. (1980) hypothesized "that the more important a pet is in a person's life, the more benefit a person may derive from the pet" (p.346).

Loneliness

Loneliness is a common experience at one time or another in most people's lives. Loneliness is often incommunicable. It is as difficult to define as it is to articulate (Bernikow, 1986). Ryan and Patterson (1987) indicated loneliness as being a "psychological phenomenon having powerful implications for mental health and illness". Peplau (1982) described loneliness as an extremely unpleasant experience, "so dreaded and so painful that it must be disguised". Francis (1981) defined loneliness as "a vague, dysphoric, reactive response to the more or less temporary separation from persons and things one has endowed with meaning, import, and energy...".

The older adult and the elderly in particular are considered to be more susceptible to loneliness primarily due to life events that contribute to its development (Peplau, 1982; de la Cruz, 1986). The elderly, like those younger than themselves, require the provisions of social relationships but more than the young they stand in risk of losing relationships to death or to the unpredictability of their own, their friends or their children's changing circumstances (Weiss, 1973). In addition to widowhood, other numerous factors have been identified as contributing to the incidence of loneliness and have included the availability of transportation, the frequency of visitors and phone calls, and being female. Further correlates of loneliness have been identified as physical incapacity, perception of inferior health, perception of dependence, relocation, role change, pain, and the loss of pet (Burnside, 1981; de la Cruz, 1986; Meis, 1985; Townsend, 1973).

The experience of loneliness in elders is often particularly distressing because of their advanced age. Ellison (1980) in his book, Loneliness: The Search for Intimacy, writes with insight about what it is like to be old and lonely. He says loneliness carries with it a desire for things to be different. Frequently there is an underlying sense of yearning and searching for a companion who can satisfy the emptiness and lift one's spirits. Often elders experiencing loneliness fear that things won't change, that a companion won't be found, that others won't find them worthwhile.

Ellison (1980) notes that pets can diminish the pain of loneliness for many people. Pets are important sources of affection and attachment for millions of people. The companion animal accepts the elderly person despite their level of self-esteem, role changes, and physical changes (Levinson, 1969). The companion animal is a significant other with whom to share feelings and communicate. "A pet can provide in boundless measure, love and unqualified approval (Fraser, 1992).

A companion animal can be extremely helpful and important to the elder owner. The establishment of a bond between an elder and a pet can improve perceived quality of life by alleviating loneliness. At times, Ellison writes, "pets seem almost human sensing when we're happy or sad" (p.162). The key to the effectiveness of pets with elders in particular is that deep bonds are formed between them that help sustain the elder when other bonds seem to be disintegrating (Ellison, 1980)

In summary, Roy's adaptation model coupled with Bowlby's attachment theory provide a conceptual orientation for investigating the human-companion animal bond. Theoretical reviews are needed to further our understanding of the

nature of the human-companion animal bond and its relationship to the health status of individuals (Friedman et al, 1980; Levinson, 1969; Robb & Stegman, 1983).

Health and the Human-Companion Animal Bond

Although animals have been companions to humans since prehistoric time, little empirical research has been conducted on the effects of animal companionship. One third to one half of all households in the English speaking world have pets (Garrity, Stallone, Marx, & Johnson, 1989; Ory & Goldberg, 1983; Siegel, 1990; Soares, 1985), and in most cases these animals are highly valued. In fact, the identification of one's pet as a family member is quite prevalent. Ninety nine percent of dog or cat owners entering a university veterinary clinic answered affirmatively to a survey question about their pet's status as a family member (Voith, 1985). In another survey, 87% of pet owners considered their pet to be a member of the family (Cain, 1983).

The literature on animals as human companion can be roughly divided into studies on naturally occurring pet ownership and studies in which pets have been introduced as a form of intervention. Studies on naturally occurring pet ownership are fewer in number, yet tend to be stronger methodologically (Siegel, 1993). The majority of these studies pertain to elders; perhaps because elders as a group are thought to have pronounced companionship needs (Siegel, 1993). According to the National Center for Health Statistics, more than 26 million Americans over the age of 65 are not hospitalized or living in a nursing home. About one third of

these people live alone. In addition, estimates from three separate studies (Garrity et al, 1989; Ory & Goldberg, 1983; Siegel, 1990) suggest that approximately one third of persons older than 65 live with pets. As one can easily see, the area of human-animal companionship, particularly in the elderly population is and will continue to be a focus of research.

Research results as well as extensive clinical observations in the recent past have lent a degree of credibility to long-held beliefs that close association with animals contributes to human health and well-being.

The health benefits that will be discussed will be grouped into three areas: physical benefits, psychological benefits, and sociological benefits. Physical benefits include being associated with decreased mortality following serious illness, stimulating regular exercise and supporting rehabilitative efforts. Psychological benefits include promoting psychological well-being, preventing or decreasing psychiatric symptoms, and improving life satisfaction and happiness. Sociological benefits include increasing social interactions, offering protection and security and contributing to institutional morale.

Physical Benefits of the Human-Companion Animal Bond

Friedman et al, (1980) found in a study of 92 patients who had been hospitalized with cardiovascular disease that pet ownership correlated significantly with survival rate. The researchers found on a one-year follow up on mortality comparisons that 28% of the patients who were not pet owners had died as compared to only 6% of the pet owners (Friedman et al, 1980).

Three prominent findings from the study were: 1) pet ownership proved a more significant factor in survival rates than either marital status or family contact; 2) regardless of physiologic status, survival rate was associated with pet ownership; and 3) even when researchers controlled for pets (dogs) with whom exercise might be a factor, the findings held true. These researchers concluded that "from our findings, it seems that social variables such as pet ownership can add significantly to the variance in survival explained by the severity of the cardiovascular disease" (Friedman et al, 1980, p. 310). These researchers denied knowledge of any specific mechanism for why these physical health effects due to pets were present. The possibility was discussed though, that perhaps pets may be important in providing an object for the person to focus attention on in a pleasurable way, by giving attention without the 'cost' that similar love and attention of another human may involve, and simply by virtue of contact comfort, be causing direct physiological effect (Friedman et al, 1980). Voith (1985) proposes that the mechanism by which a person becomes attached to an animal is the contact comfort provided by the tactile stimulation of petting the companion animal.

The physiologic effects of tactile stimulation are not well understood (Weiss, 1979). Petting, a tactile link between a person and a companion animal, provides a form of contact comfort that appears to have a mutual, interacting effect. It is not uncommon for pet owners to pet their companion animal as a means of relaxation and enjoyment. Katcher & Friedman (1980) suggest that the rhythmic, lulling, repetitive nature of petting a companion animal could be considered a passive, meditative focus on a non threatening stimulus that can

potentially relax an individual by lowering their state of arousal. Studies have shown that petting a bonded companion animal decreases blood pressure in healthy subjects (Baun, Bergstrom, Langston, Thoma, 1984; Grossberg & Alf, 1985).

Studies conducted by Thoma, Todd-Schulke, Trase and Wallace (1988) also showed that companion animals can decrease blood pressure and increase peripheral skin temperature in hypertensive subjects. Baun and colleagues (1984) studied the physiologic effects of petting a dog with whom a companion bond had been established as opposed to petting a non bonded dog. Using a within-subject experimental design, 24 normotensive subjects read quietly, petted a non bonded dog, and petted a bonded dog. The order of the three treatment conditions was assigned randomly. Blood pressure, heart rate, and respiratory rate were recorded at three minute intervals for each nine minute treatment session. Subjects were allowed to talk or shift positions between treatment protocols. The data indicated that petting a bonded dog significantly decreased the systolic ($M 7.8$ mm Hg, $F = 7.71$; $p < 0.001$) and diastolic blood pressure ($M 4.3$ mm Hg, $F = 9.03$; $p < 0.005$), which paralleled the relaxing effect of reading (systolic $M 7.2$ mm Hg; diastolic 1 mm Hg).

In another study using 10 hypertensive subjects, Thoma (1984) reported statistically significant differences between two protocols of quiet petting of a dog with whom a companion bond had been formed and quiet petting of an unknown dog in measurements of peripheral skin temperature ($F = 6.21$; $p < 0.01$) and muscle tension ($F = 4.46$; $p < 0.036$). Mean peripheral skin temperature increased 2.6° F in the protocol in which subjects petted a bonded dog and 1.4° F in the non bonded dog protocol. There was a statistically significant time effect for both systolic

($F=7.03$; $p<0.00$) and diastolic ($F=3.11$; $p<0.0028$) blood pressure. Mean systolic blood pressure in the bonded dog protocol decreased by 6.4 mm Hg and diastolic blood pressure by 6.0 mm Hg. The mean systolic blood pressure and mean diastolic blood pressure decreased 3.6 mm Hg and 4.2 mm Hg respectively in the non bonded dog protocol. There were no significant differences in systolic or diastolic blood pressures and heart rate between petting bonded or non bonded dogs. Likewise, there were no statistically significant differences in heart rate demonstrated between the two protocols.

In contrast, a study conducted by Oetting (1985) found no statistically significant differences between any of the treatments on blood pressure, heart rate, or peripheral skin temperature, nor did blood pressure decrease or peripheral skin temperature increase over time during the protocol in which subjects petted their bonded companion animals. These results could be explained by the fact the previous studies used a with-in subject design which allowed for all treatments to be given to each subject; whereas Oetting's study (cited in Baun et al, 1984) used four different groups of subjects, one for each treatment group. The Oetting's study was conducted in the subject's homes where interruptions did occur and ambient temperature varied, despite the best efforts of the investigator and subjects.

Another physical benefit that a pet can provide is that of stimulating exercise by providing an incentive to engage in health-promoting physical activities (Katcher & Friedman, 1980). For example, these authors found that a dog's need to be walked gives it owner regular exercise. Katcher (1981) found that a pet can stimulate one to be active and busy when involved in feeding, grooming, and

exercising a pet. Erickson (1985) noted that a trip to the store for pet supplies provides activity for someone who might otherwise have little impetus to venture out. In addition, this researcher pointed out the relatively minor physical exercise resulting from picking up, playing with, and grooming a small animal may help maintain or restore joint mobility and muscle strength.

Rehabilitative efforts frequently involve range of motion exercises to prevent contractures especially in neurologically impaired patients. Pets as an intervention have been used as an adjunct to physical therapy. Patients may reach out to touch their pets using muscle groups and doing active range of motion movements they may not have attempted in the absence of these pets. Particularly in the older adult population where resources are limited for many such clients, this added stimulation could be the difference between preserving function of a limb and not. Willie (1984) in an article discussing the therapeutic use of companion pets for neurologically impaired patients noted that "companion pets need exercise and, in the process, humans exercise too" (p.325). Willie (1984) asserts that companion animals can provide cognitive, sensory and motor stimulation-goals of rehabilitation. In an anecdotal description, Twinaime (1984) states "individuals who are reluctant to move stiff or painful limbs will reach out to an animal more quickly than they would respond to other stimuli" (p. 34).

Psychological Benefits of the Human-Companion Animal Bond

The elderly adult feels that it is inappropriate for him either to receive or to dispense kisses or hugs. He is too embarrassed to bestow such emotional behavior upon another human being. He finds it acceptable, however, to

demonstrate love for a pet. (Even adults are uninhibited in bestowing hugs and kisses upon their pets). A pet can serve as a new love object to whom one can give all the love he wishes without fear that the pet will not reciprocate or will desert him.

Boris Levinson (1970)

By far the majority of empirical evidence to support the benefits associated with the human-companion animal bond is in the area of psychological effects. Loneliness is often cited as the worst aspect of aging (Peretti & Wilson, 1975, Tobin & Neugarten, 1961). Meaningful relationships are terminated as friends die and move and the older adult is alone and unable to cultivate the kinds of relationships so necessary for him or her (Blau, 1973). Often pets can fill the void left when meaningful relationships are lacking. Pets can become a constant source of satisfaction when interaction with other humans is severely restricted (Fogle, 1981). Among the elderly, the emotional involvement can be as great or greater than it might have been with another human being (Cottrell, 1974; Peretti, 1980; Van, 1978).

In a study conducted by Lyle Vogel and colleagues at the School of Public Health at the University of Michigan (cited in Cusack & Smith, 1984), companionship was recognized by pet owners and non-pet owners alike as the major advantage of having the animal. The ranking was 1) companionship-70.5%; 2) love and affection-52.2%; 3) pleasure-39.3%; and 4) protection-36% (cited in Cusack & Smith, 1984).

The one study reviewed that had a conceptual framework base was Calvert's study (1988) in which human-pet interaction and loneliness in nursing home residents, using Roy's adaptation model of nursing was examined. The

purpose of the study was to test the hypothesis that the residents of a nursing home who experienced higher levels of interaction with pets in a pet program would report less loneliness than those who experienced lower levels of interaction. A second hypothesis was that the residents who participated in a resident pet program would experience less loneliness than those who participated in a visitation pet program. Roy's concepts of environmental stimuli as factors influencing adaptation and interdependence as a mode of response to the environment were used as models. Calvert's (1988) sample for the study consisted of 65 residents from two county homes with resident pet programs and two nursing homes with visitation pet programs. Thirty-seven (57%) subjects from the total sample were from county homes with resident pet programs (Calvert, 1988). Twenty-eight (43%) were from nursing homes with visitation pet programs (Calvert, 1988). The majority of the subjects were women (74%) who were widowed (62%). The age range extended from 42 to 92 years with a mean age of 73.8 years (Calvert, 1988). The researcher conducted interviews and found that the level of loneliness reported was lower for residents who participated in resident pet programs and had higher levels of interaction with the animals, compared with the other subjects. There was no indication in the study that content validity had been used in developing one of the instruments used to measure human-pet interaction; nor was there any reference to reliability measures utilized for this particular instrument. The other tool utilized did have data supporting its reliability and validity. The study was remiss in not providing some essential information. For example a time frame for the data collection was not included. In addition,

question(s) used to ascertain the elder's level of interaction with the pet were not identified.

A study conducted by the Purina Pets for People Program (Green, 1987) which interviewed 64 elders found again, that companionship is one of the chief values of pet ownership for seniors. It was reported that 98% of those studied had daily conversations with their animals. Seventy-five percent reported watching television with their pets on a daily basis, while three out of five enjoyed taking a nap together. More significantly though, was that 90% stated that their pets helped to reduce tension and stress in their lives. Approximately 70% believed their pets pushed them to take better care of themselves and to maintain their sense of independence. Ninety-eight percent agreed that owning a pet made them feel less lonely, and almost the same percentage of participants indicated that their lives were happier overall because of their companion animal.

An early and now considered to be classic study (Mugford & M'Comisky, 1975) evaluated the therapeutic effects of companion animals on an out-patient population. The researchers selected 30 elderly pensioners ranging in age from 75 to 81. Two groups were given budgerigars (parakeets) which were selected as the therapeutic animal because of their ease of care and adaptability to most home environments, and two groups were given begonias. A final control group received neither flora nor fauna. An additional factor, television, was considered as the researchers theorized that a pet may be less important to television owners since this does provide interaction with society as a whole and thus could affect the elder's evaluation of his/her loneliness. At the beginning of the study, a 30-item questionnaire which measured attitudes towards self and others as well as the

physical and psychological environment was given to all participants. During the course of the five-month study, the pensioners were visited by social workers, and at the conclusion of the time frame, the questionnaire was given again. Overall evaluation showed budgerigar ownership had a positive effect. Twelve elders who had received the birds showed marked improvement, especially in the areas that concerned attitudes towards other people and their own psychological health. The presence or absence of television made no statistical difference. The birds became an important subject of the elders' conversations and enhanced their social lives with friends and neighbors. All the recipients immediately named their birds and took full responsibility for their care. Many bought toys for the birds and trained the birds to leave the cages. One elderly woman taught her bird to recite the names of the neighborhood children and as a result she had frequent visitors. Follow up in a year and a half revealed the elders still had the pets and were taking good care of them.

Guttman and Zemanek (1986) studied the significance of pet ownership as well as personality and attitudinal variables of community-dwelling elders who owned dogs and cats. The measured variables included: nature of the social environment, subjective feelings of loneliness, the meaningfulness of one's experience of life, psychological condition, attitudes toward one's pet, and objective data regarding participant's coping behaviors. The majority of participants described themselves as somewhat lonely and reported being more satisfied with their lives since they acquired the pet. Reduced social deficits and feelings of uselessness were also reported. The increased mobility, which necessarily results from keeping a dog in particular, was found to contribute to

increased feelings of well-being and in turn led to more frequent social contacts. A minority, however, did report no change in their lives or the experience of additional burdens. This finding was thought to reflect the elders' ability to cope, especially in regard to economic, social, and health factors.

Robb and Stegman (1983) surveyed a randomly selected sample of veteran clients receiving home health care through the Pittsburgh VA Medical Center. Total sample size was 56 including 26 pet owners and 30 non-pet owners. The study was undertaken to explore the possibility that association with companion animals enhances human coping ability in the areas of physical and psychosocial health. Measured variables included: morale, social interaction, mental status, psychological symptoms, ability to perform physical and instrumental activities of daily living (ADLs), number of diseases, number of medications, and locus of control. No significant differences were found between owners and non owners, even when distinguishing between high-bond and low bond clients. These researchers hypothesized that perhaps the lack of corroboration with earlier studies was due to such factors as the all-male sample, the difficulties in defining variables, and oversimplification of the alleged correlation between companion animals and human health benefits. It was also speculated that animals may help clients cope with crises or losses in their lives and that absence of such events in the participant's lives during the time of the study may have accounted for the lack of measurable impact (Robb and Stegman, 1983).

Another study that questions the simple cause-effect relationship between pet ownership and health is the study by Lawton, Moss & Moles (1984). These researchers reviewed National Senior Citizens Survey data from 1968 (N=3,996).

The survey contained a single question about pet ownership. These investigators conducted a multivariate association analysis between pet ownership and nine variables (age, sex, race, income, urban versus rural residence, number of persons in the household, tenure, number of housing units per structure and size of community). Morale data was collected by the surveyors using the Philadelphia Geriatric Center Morale Scale. Reliability and validity of this instrument was not provided by the investigators in this report. These investigators report "a multiple regression analysis using the nine demographic and housing variables as control variables...showed no independent contribution of pet ownership to morale" (Lawton et al, 1984, p. 209). Despite the statistical non-support, the investigators caution that "one need not demand a direct reflection of caring for a pet on overall psychological well-being to conclude that for some people a pet can be an extremely salient aspect of life" (Lawton et al, 1984, p. 210).

In another study conducted by Mahalski, Jones & Maxwell (1988), the intent was to determine whether local pensioners wished to keep pet cats in pensioner housing owned by the city. The researchers also wanted to see whether pet cats helped to assuage feelings of loneliness in elder women. The sample was 40 women pensioners over age 60, living alone in a home administered by one of two city authorities. Twenty lived in Dunedin, where pets were prohibited, and 20 lived in Christchurch, where cats were permitted. One half of the Dunedin sample wanted a cat, one half did not. One half of the Christchurch sample owned a cat, one half did not. One half of the subjects in each sample were randomly selected from the list of renters in publicly owned pensioner units and the other half was selected by a matching process. The participants were selected after visiting 106

homes. The method used was a four -part questionnaire. Part one consisted of questions that measured the general attitude about neighbors owning cats. Part two asked questions regarding perceived advantages and disadvantages of owning cats. Part three asked questions regarding perceived advantages and disadvantages of having cats in the neighborhood (to non-owners). Part four included four scales and questioned participants' relationships and feelings about people. Two scales measured social contact (number of hours spent with close friends over the previous three days and number of hours spent with acquaintances over the previous three days). The third scale measured feelings of loneliness, using five questions from the UCLA loneliness scale. In addition, Christchurch cat owners were asked if they felt less lonely because of their cats. The fourth scale measured feelings of closeness to others, using five questions from the Close Relationship Scale. Each question had five possible answers, with a numerical score from 1-5, with 3 being neutral. Data was analyzed using analysis of variance with the two main comparisons between 1) the 20 people who owned or wanted a cat and the 20 who did not own or want a cat, and 2) the two cities.

The results were interesting. Although the objective evidence about social contact indicated that the pensioners spent many hours of the day by themselves, subjective evidence showed that only six of the pensioners reported feeling lonely "often" or "almost always". Nine out of the ten Christchurch cat owners stated that they felt less lonely because of their cats. There was no significant difference in the loneliness scores between the four groups. The authors suggest that there may be different interpretations of the term "loneliness", with some individuals defining it as being unloved, and others defining it as being alone. In the case of

the pensioners who asserted that their pet cats did provide companionship, the amount of time the subjects spent alone was decreased.

There were multiple weaknesses noted in the study. The matching process for the sample was done in a subjective manner, using potential subjects' response to the question "Would you own a cat if you were permitted to?" Cat owners in Christchurch were simply matched with non-cat owners. There was no measurement of loneliness prior to owning a cat, therefore having a cat may or may not have resulted in the cat owners' feeling of not being lonely. In other words, there was not an established causal relationship between level of loneliness and owning a cat. There was no data given regarding the reliability or validity for either the Close Relationship Scale or the UCLA loneliness scale. All the data collected was based on self-reporting, leading to non-objective data. The sample from Dunedin, where cats were not permitted, may have been biased because they lived in a restricted situation, although this did not show in the results of the study. The sample owning cats were biased, which may explain the conclusion that owning cats contributed to decreased loneliness. All in all the study was very subjective.

Additional research has expanded on the complexity of associations between the variables of pet ownership and the impact of pets on their owners. Lago, Knight, and Connell (1983) performed post-hoc analysis on data collected from a demonstration project at Pennsylvania State University, using stepwise regression to determine the effects of pets on the well-being of a sample of community dwelling elders. The findings of this study revealed that a favorable attitude toward pets contributed more to the perceived happiness of elder pet owners than several other commonly cited predictors, including measures of social

satisfaction and activities of daily living (ADLs). This effect though was dependent on marital status. For unmarried individuals, a favorable attitude toward pets contributed to increased happiness. In contrast, for married subjects a favorable attitude toward pets was associated with decreased happiness. In light of the correlational nature of these results, one must question whether or not marital distress, as a potential source of overall unhappiness contributed more to this finding.

A study by Goldmeier (1986) emphasizes the significance of social context as a moderating factor in studies of the emotional benefits of pet ownership. This researcher compared four samples of elder women who were living alone or with other persons, and with or without a companion pet. Goldmeier wanted to know whether or not pets made a difference in feelings of "lonely dissatisfaction" as defined by Lawton (1972; 1975) and assessed by the Philadelphia Geriatric Morale Scale. Results showed that the presence of pets was associated with a lowered sense of lonely dissatisfaction in elder women living alone but that this was also true for elder women living with others. Goldmeier surmised that a pet may not be as important a companion when there are other people in the environment.

The following study of pet ownership explored the complex relationships among pet ownership, emotional distress, and illness behavior in the context of several other relevant variables. Garrity, Marx and Stallones (1986) conducted an epidemiologic study which examined a national sample of elders and assessed the quality of attachment between elderly pet owners and their pets as well as the role of pet ownership and attachment in reducing emotional distress and illness. Self-reported predictor variables included: recent life events, recent daily irritations,

pet ownership, and attachments to pets. Dependent variables included: emotional distress and participants' illness behavior over the prior twelve month period. Responses from 1232 households in 45 states suggested that neither pet ownership nor strength of pet attachment was significantly associated with emotional distress or recent illness experience. The interactions of pet ownership/attachment and stress variables likewise failed to demonstrate a connection to emotional distress or illness behavior. Pet attachment, however, was weakly associated with decreased frequencies of illness behavior in a multiple regression equation which controlled for stress and stress-pet interaction terms.

Building on the prior study, Siegel (1990) prospectively studied the utilization of physician services among a sample size of 938 elders (age 65 years and older) living in Southern California who were enrolled in a health maintenance organization via Medicare. The study controlled for demographic characteristics and health status at baseline. Subjects were interviewed by telephone at the onset of the study and then every two months for the following year. Fifty-eight interviews were conducted face-to-face because poor hearing or other impairments interfered with the use of the telephone. The initial interview collected information on demographic characteristics, recent life events, psychological distress, health status, and pet ownership. Interviews two -seven determined whether the subject had contacted the doctor since the previous interview. Doctor contacts were aggregated across the study year. For pet owners, information on their relationship with their pets was collected during Interview Two. Four aspects of the human-animal relationship were assessed: degree of responsibility for the pet, time with the pet, affective attachment to the pet, and perceived benefit minus cost

difference. Subjects who owned pets reported fewer doctor contacts over a one-year period than subjects who did not own pets. In addition, pets seemed to help their owners in times of stress. The number of pre-baseline stressful life events was associated with increased doctor contacts during the study year for participants without pets. This relationship did not emerge for pet owners. The data showed quite clearly that pets can influence physician utilization among the elderly. This was particularly true for elders that owned dogs. Pet owners visited the doctor less than non owners during a one-year period, and pets seemed to buffer people against the impact of stressful life events. These findings are strengthened by the prospective nature of the study, the control of several demographic and health variables, and the fact that a prepaid health plan limited any financial disincentive for doctor visits.

Cognitive stimulation to keep people in touch with reality is a psychological benefit associated with companion animals. Attention to feeding, exercise, and elimination schedules of pets can preserve cognitive alertness as well as promote a trust relationship (Wille, 1984).

Additionally, other investigators point to psychological effects of pets in relation to feelings of pride and self-esteem; making people feel wanted and worthwhile. Levinson (1969), in discussing pets and old age, noted that the "concepts of themselves as worthwhile persons can be restored, even enhanced, by the assurance that the pets they care for love them in return" (p.368). The rationale provided is that "it apparently does not matter to the animal that his master feels old and unwanted or that his body has changed" (Levinson, 1969, p. 364).

Sociological Benefits of the Human-Companion Animal Bond

Cobb (1976) has provided the accepted definition of social support: "Information leading the subject to believe that he is cared for and loved, esteemed, and a member of a network of mutual obligations" (p.300). Basically, social support satisfies our inherent human need to have meaningful interpersonal relationships (Levinson, 1972). Pet ownership may be a source of social support as it provides a sense of continuity over the life cycle (Levinson, 1972).

Pets appear to provide two types of social support: esteem and social companionship (Davis, 1991). Esteem support provides for the individual a sense of being valued and accepted (Davis, 1991). Social companionship on the other hand meets a specific need for affiliation and contact with others (Cobb, 1976). Animals frequently become a link for stimulating conversation that encourages people to talk about their "pasts and their passions" (San Francisco Society for the Prevention of Cruelty to Animals, 1987, p.2)

In the study conducted by Bath, Krook, Sandquist and Stantze (1976), 63% of dog owners credited their dogs with initiating additional opportunities to converse with people. Furthermore, 53% felt that their dogs had attracted friends.

A more recent study that lends credibility to the previous study was conducted by Rogers, Hart and Boltz (1992). The purpose of the study was to compare dog owners and non-owners with regard to their conversations while walking, their exercise levels, and their general social and psychological functioning. The investigators recorded casual conversations as elders walked their dogs through a mobile home park. Participants were five women who owned

dogs and a control group composed of four women and two men who did not own dogs. Control observations included walks without dogs by owners and non-owners of dogs. Transcribed conversations indicated that dogs were a primary focus of conversation. Dog owners reported taking twice as many walks as non-owners. In addition, dog owners reported significantly less dissatisfaction with their social, physical, and emotional states.

A number of other studies analyzed the use of animals as catalysts for social interactions. Robb, Pristash and Boyd (1980) investigated the effects of specific objects in encouraging social interactions. A wine, bottle, a plant, and a caged puppy were presented in sequence to elderly residents of a long-term care facility. In observing the social behaviors of verbalizes, smiles, looks towards the object, open eyes, and leans towards the stimulus, the caged puppy elicited more responses. These results suggest that bringing a puppy to a group would increase social behaviors because of the lively characteristics of an animal versus an inanimate object (Fick, 1992).

Several authors refer to the ability of pets to act as "social catalysts" or "social lubricants" which has the direct effect of increasing the interactions of their owners (Corson & Corson, 1981; Jessee, 1985; Haggard, 1985; Mugford & M'Comisky, 1975) others however, have noted no differences in social variables between pet owners and non-owners (Stewart, 1985; Mushel, 1984).

Fields (1977) studied the social interaction between persons and pets by ethnomethodological analysis in two nursing home settings in which the introduction of pets had been characterized as being part of a program of "Pet Facilitated Psychotherapy." The settings represent two different instances of the

use of pet animals, first as "guests" on four nursing home wards and second as "owned" by residents who live in "apartment" arrangements within the nursing home complex. The basic elements in pet person social interaction in institutional settings suggest that the introduction of a pet alters a social situation in such a way that social interaction is increased, improved and thereby enhances independent living (Fields, 1977).

Hendy (1987) conducted a study to determine whether the sociability effects on nursing home residents seen with various visiting programs were greater when the visitors were people, people with pets, or pets.. The results of that study showed that all of these visitors work equally well to increase alertness and smiling. However, the sample size was relatively small (N=11), leading to questionable validity of the study.

Davis and Juhasz (1984) noted "companion animals provide human beings with a channel for communication with other human beings, that they elicit a sense of control from dependent persons, and that they improve the self-esteem of their owners," and that "companion animals can also augment the isolated or elderly patient's social support system" (p.498-9).

Summary

There is no time in one's life when loneliness ceases to be a threat. One of the risks of aging; however, is an increased vulnerability to loneliness. Frequently, it is a response to deteriorating physical and mental health as well as environmental changes such as loss, a change in living arrangements, separation from meaningful others and things, and physical isolation (Francis & Odell, 1979; de la Cruz, 1986; Ryan & Patterson, 1987)

According to Levinson (1969, 1972) companion animals can help fill the void left by loneliness as pets serve as emotional anchors, or life reinforcements for persons whose external world is in transition due to the loss of family, friends, and economic responsibility. Loneliness can inhibit adaptive ability and lead to diminished health. A companion animal may be one way to reduce loneliness and enhance adaptation.

This chapter has presented Roy's adaptation model using two key concepts from the model, of environmental stimuli and interdependence, as a conceptual framework for examining the human-companion animal bond. Additionally, important concepts concerning attachment theory and loneliness were discussed. In conclusion, a selected review of the literature addressing the physical, psychological, and sociological health benefits were presented. Three conclusions from this chapter have been ascertained:

- 1) The qualitative aspects of the human-companion animal bond influence the significance pet ownership has on the individual's health.

- 2) The degree of attachment between the companion animal and its owner is one of those qualitative aspects.
- 3) There is a recognized need for research that describes the quality of the human-companion animal bond to further define the health benefits of pets.

Chapter 3

METHODS

Research Design

This is a descriptive, exploratory study. The purpose is to explore the extent to which attachment to a companion animal is related to loneliness in the elder owner.

Sample and Setting

The subjects who participated in this study were selected using non random, convenience sampling. Selection criteria for subject inclusion was based on three factors: the pet owner must be age 60 and older; the pet owner must speak English and read at an eighth grade level and must currently own a pet (dog and/or cat). The sample was drawn from three sources: The Veterinary Services Clinic on McChord AFB, WA; the PETsMART store in Lynnwood, WA and the NorthShore Senior Center in Bothell, WA.

Data Collection

A poster describing the study and the need for participants was strategically placed in each location. The information that was included on the poster indicated

that this was a research study conducted by a University of Washington Graduate Student. The title of the study and the subject inclusion information were indicated on the poster. In addition, directions were provided to participants to pick up and complete a packet which contained an Information Statement, Demographic Information Questionnaire, the Lexington Attachment To Pets Scale Questionnaire and the Abbreviated Loneliness Scale Questionnaire. For the purpose of maintaining confidentiality, the subjects were asked not to identify themselves on the questionnaires.

Description of Tools

The tools used in this study were the Lexington Attachment to Pets Scale (LAPS) developed by Johnson, Garrity and Stallones, (1990) and the Abbreviated Loneliness Scale (ABLS) developed by Paloutzian and Ellison, (1982).

Lexington Attachment to Pets Scale (LAPS) Questionnaire

The LAPS is a 23 item, self report, Likert scale. A number of items were adapted from previous attachment scales, including the Companion Animal Bonding Scale (Poresky, Hendrix, Mosier and Samuelson, 1987) the Pet Attitude Scale (Templer, Salter, Dickey, Baldwin and Veleber, 1981) and the Pet Attitude Inventory (Wilson, Netting, and New, 1987).

The internal consistency of the 23 questions was estimated using coefficient alpha and was constructed using data collected from a random probability sample of pet owners in a medium-sized metropolitan area (Johnson, Garrity and

Stallones, 1990). The coefficient for these items was 0.928, indicating a high degree of internal consistency (Johnson, Garrity and Stallones, 1990).

Fourteen of the 23 items are indicators of strong pet attachment. The data also indicated that the theoretical range of pet attachment is more adequately covered by scale items at the high attachment end of the spectrum (Johnson, Garrity and Stallones, 1990). Although the remaining nine items in the scale could be endorsed by individuals with less than average levels of pet attachment, these items have a more restricted range (Johnson, Garrity and Stallones, 1990). In general, these findings suggest that the LAPS is more successful in measuring strong attachment than weak attachment (Johnson, Garrity and Stallones, 1990).

Although validation of any instrument is an ongoing process, the LAPS appears to have content validity in that the items all appear to represent some level of attachment to a companion animal (Johnson, Garrity and Stallones, 1990). Evidence for the construct validity of the LAPS comes from its association with other respondent characteristics previously demonstrated to be related to pet attachment. In particular, gender, education, income, marital status, the presence of children in the household, having grown up with pets, and being primarily responsible for pets have all been significantly correlated with pet attachment in other studies (Kidd and Kidd, 1989; Lago, Kafer, Delaney and Connell, 1988; Garrity, Stallones, Marx & Johnson, 1989). What was interesting, though was the association between LAPS and indicators of social relationships. For both primary and secondary social relationships, respondents reporting fewer ties were found to have greater attachment to their pets (Johnson, Garrity and Stallones, 1990). To the extent that pets might be expected to play a more central role in the lives of

individuals with smaller social networks, these results represent evidence of construct validity (Johnson, Garrity and Stallones, 1990).

Abbreviated Loneliness (ABLS) Questionnaire

The ABLS is a seven-item, self report, Likert scale developed by Paloutzian and Ellison (1982) from the UCLA Loneliness Scale (Russell, Peplau, and Ferguson, 1978). The correlation between version II of the ABLS and the UCLA Loneliness Scale is $r = .73$, $p < .001$. The magnitude of this correlation suggests that the ABLS is tapping essentially the same dimension as the UCLA Scale. Test-retest reliability of the ABLS was $r = .85$, $p < .001$. According to Paloutzian and Ellison (1982):

the index of internal consistency, coefficient alpha, was .68, indicating that the items cluster together fairly well. The validity of the ABLS is supported by the nearly parallel correlations between both the ABLS and the UCLA measures of loneliness and a variety of criterion variables. These include self-esteem, social skills and developmental background variables, as well as a list of emotional experiences when lonely. Taken together, these findings suggest that the ABLS would be useful in subsequent research (p.229).

Data Analysis

Several statistical measures were employed to analyze the study data. Initially all data were examined for central tendencies and descriptive characteristics. Internal consistency of study instruments was explored. Parametric statistics were utilized to investigate the research questions.

Pearson Product Moment Correlation Coefficient was employed for question one, which asked if there was a correlation between attachment to companion animals and loneliness among pet owners. Question two was not analyzed because research question one was not supported by the data.

Although not part of the original research questions, other questions of interest were examined utilizing a variety of additional statistical tests to include Pearson Product Moment Correlation Coefficient (Pearson's r), T-tests, One -Way Analysis of Variance (ANOVA) and Analysis of Variance.

Chapter 4

Results

Introduction

This chapter will present the characteristics of the sample, the statistical methods employed to test the hypotheses of this study and the results obtained. The tables describing these results are displayed at the end of this chapter.

A convenience sample of 81 subjects responded to the Abbreviated Loneliness Scale (ABLS) and Lexington Attachment to Pets Scale (LAPS) questionnaires. Of the 81 questionnaires collected, 10 were from individuals utilizing the services at a Veterinary Clinic on McChord AFB; 23 were from the PETsMART Store in Lynnwood and 48 were from the Northshore Senior Center in Bothell.

The data was analyzed using the Statistical Package for the Social Sciences (SPSS) at the University of Washington. Several statistical tests were employed to analyze the data including Pearson Product Moment Correlation Coefficient (Pearson's r), T-tests, One Way Analysis of Variance (ANOVA) and Analysis of Variance.

Characteristics of the Sample

The sample consisted of 81 subjects. Participants ranged in age from 60 years to 87 years with a mean age of 70.2 (± 7.2) years.

Table 1 describes the participants according to the following demographic characteristics: gender, age, ethnicity, number of people in household, and pet ownership.

With regard to the question addressing pet ownership, an overwhelming majority of subjects (98.8%) stated that the dog and or cat belonged to them instead of another member of the family. Of the sample, 32 individuals owned 1 or more cats, 60 owned 1 or more dogs. Of the 32 individuals who owned cats, 22 owned their cat(s) longer than a year. Of the 60 individuals who owned dogs, 51 owned their dog(s) longer than a year. In comparing the type of pet owned by gender; 4 (20%) of the males owned cats, 13 (65%) of the males owned dogs and 3 (15%) owned both. In contrast, 17 (28.3%) of the women owned cats, 36 (60%) of the women owned dogs and 7 (11.7%) owned both.

Results

The following describes the principal findings of this study related to the proposed research questions. The first research question asked , if among pet owners is there a relationship between attachment to companion animals and loneliness.

The initial data analysis utilized the entire sample of 81 subjects, the mean score on the ABLS was 12.15 (± 2.6). The range was 8-18 (7-28 possible). The mean score on the LAPS was 56.24 (± 10.8). The range was 14-69 (0-69 possible). Table two summarizes these findings. The parametric statistic Pearson Product Moment Correlation was used to analyze question one. The coefficient was $r = .17$ (NS). Although a positive relationship does exist, the more lonely one is the more attached, the relationship is weak and not statistically significant. Table three summarizes this finding.

Question two which asked are there intervening factors such as gender, partnership, ethnic identity and education which mediate the relationship between companion animals and loneliness; was not tested since the relationship between loneliness and attachment was found to be weak and non significant.

The reliability of the ABLIS and the LAPS questionnaires were determined by the SPSS sub-program reliability, with examination of the entire scales. Internal consistency for the ABLIS using the Cronbach's alpha coefficient was $\alpha = .6597$. Internal consistency (Cronbach's alpha) computed for the LAPS was $\alpha = .9212$.

A secondary analysis of this data was initiated to determine if differences in attachment could be found by comparing individuals with extreme scores on the loneliness scale. Group 1 (least lonely) were selected from individuals whose scores on the ABLIS were in the bottom 16%. The second group (most lonely) consisted of those individuals whose scores on the ABLIS were in the top 17%. The LAPS scores for these two groups were compared using T-test. There was a significant difference in means of the LAPS between the two groups. The least lonely group had a mean score of 54.15 and the most lonely had a mean score of 61.21. The difference in attachment to a companion dog or cat, between the two groups was significant with a two-tailed probability of .041. Table 4 summarizes these findings.

Although not part of the original research questions, other questions of interest were examined.

1. There were no significant differences between men and women in regard to attachment and loneliness scores. (Table 5)
2. There were no significant differences in attachment scores if you had a spouse or didn't have a spouse. (Table 6)
3. Although there were negative correlations between pet attachment and age, education and number of persons in household, their correlations were not significant. (Table 7)
4. Comparison of those who lived alone versus those who lived with others; no differences were found on the ABLS or LAPS scores. (Table 8)
5. When looking at the relationship between dog versus cat owners and their scores on the ABLS and LAPS, no statistically significant differences were found. (Table 9)
6. When the question was asked if differences in the ABLS and LAPS score exist between subjects who own both dog(s) and cat(s) versus those subjects who only own one or the other, no significant differences were found. (Table 10)
7. No relationship was found between length of pet ownership and attachment. (Table 11)

8a. To answer the question whether or not the scores on the ABLIS and LAPS differed by age groups; a One Way Analysis of Variance (ANOVA) was used for both the ABLIS and LAPS (Dependent variables) with the independent variable, age groupings: 60, 70 and 80 year olds. No significant differences were found. (Table 12)

8b. To further explore this relationship, a least significant difference test was performed which found that the age groupings of the 60s and 70s were significantly different from each other at the .05 level. This was thought to be explained by the fact that a few subjects in their 70s scored low on the LAPS, enough to effect the overall score.

9a. An additional question is whether attachment is different for persons in specific age groups who live alone when compared with persons in the same age groups who live with others. Those subjects who are in their 60s who live alone have the highest attachment scores. (Table 13)

9b. Analysis of variance was utilized to investigate this further; no main effects or interactions were found to be significant for living alone or for specific age groups. (Table 14)

Table 1 Characteristics of the Sample (N=81)

Characteristic	Category	Number of cases	Percentage of total
Gender	Male	20	24.7
	Female	61	75.3
Age	60-69	38	46.9
	70-79	33	40.7
	80+	10	12.3
Ethnicity	Caucasian	79	97.5
	Asian-American	1	1.2
	African-American	0	0
	Hispanic	0	0
	Native American	1	1.2
Lives with others	Spouse/Partner	39	48.1
	Minor child	2	2.4
	Adult children	10	12.3
	Other relatives	2	2.4
	Friends	5	6.2
Lives alone		23	28.6
Education	Less than HS	5	6.2
	GED	2	2.5
	HS Diploma	27	33.3
	Trade/Technical school	7	8.6
	Some College	19	23.5
	College Grad	11	13.6
	Post Grad	8	9
	Missing Cases	2	3.3
Pets Owned	Cats only	21	25.9
	Dogs only	49	60.5
	Both	10	12.3
	Missing Cases	1	1.3

Table 2

Descriptive Statistics for Abbreviated Loneliness Scale (ABLS) and Lexington Attachment to Pets Scale (LAPS)

Variable	Cases	Mean	Std. Dev.
ABLS	81	12.15	2.57
LAPS	81	56.24	10.75

Table 3

Correlation Between Abbreviated Loneliness Scale (ABLS) and Lexington Attachment to Pets Scale (LAPS)

	r	p
correlation	.17	.13 (NS)

Table 4

Comparison of LAPS Score Between Most Lonely and Least Lonely Pet Owners

	N	Mean	SD	t-value	Probability
Most lonely pet owners	14	61.21	6.40	-2.18	.041
Least lonely pet owners	13	54.15	9.92		

Table 5

Comparison of Laps and ABLs Scores Between Men and Women Pet Owners

	N	LAP Mean	SD	t-value	2-tail Prob
Men pet owners	20	55.35	9.94	-.45	.659
Women pet owners	61	56.52	11.07		
	N	ABLS Mean	SD	t-value	2-tail Prob
Men pet owners	20	11.30	2.76	-1.63	.115
Women pet owners	61	12.43	2.47		

Table 6

Comparison of LAPS Score Between Those With Spouse and Those Without Spouse

	N	Mean	SD	t-value	2-tail Prob
Spouse	39	54.64	11.15	1.29	.202
No Spouse	42	57.71	10.29		

Table 7

Descriptive Statistics for Variables and Their Correlation Coefficients for LAPS

	N	Mean	SD	Correlation	P
Age	81	70.23	7.14	-.0787	(NS)
Num House	81	.728	.67	-.0881	(NS)
Education	80	4.19	1.67	-.1339	(NS)

Table 8

Comparison of ABLS and LAPS Scores of Subjects Who Live Alone With
Subjects Who Live With Others

	N	ABLS Mean	SD	t-value	2-tail Prob
Live Alone	30	11.97	2.47	-.49	.623
Live with others	51	12.255	2.65		
	N	LAPS Mean	SD	t-value	2-tail Prob
Live alone	30	58.367	8.52	1.49	.139
Live with others	51	54.980	11.77		

Table 9

Comparison of ABLS and LAPS Scores With Dog Owners and Cat Owners

	N	ABLS Mean	SD	t-value	2-tail Prob
Cat owners	21	12.57	2.79	.57	.569
Dog owners	49	12.16	2.58		
	N	LAPS Mean	SD	t-value	2-tail Prob
Cat owners	21	52.29	15.61	-1.38	.181
Dog owners	49	57.22	7.85		

Table 10

Comparison of ABLS and LAPS Score With Subjects Who Own Either Dog Or Cat

	N	ABLS Mean	SD	t-value	2-tail Prob
Dog & Cat owners	10	11.10	2.13	-1.59	.134
Dog or Cat owners	70	12.29	2.63		
	N	LAPS Mean	SD	t-value	2-tail Prob
Dog & Cat owners	10	60.10	9.91	-1.28	.223
Dog or Cat owners	70	55.74	10.90		

Table 11

Descriptive Statistics for Years Owned Dog and Cat and Their Correlation Coefficient for LAPS

	N	Mean	SD	Correlation	P
Years Cat	81	7.08	5.037	-.1171	(NS)
Years Dog	81	8.27	4.39	-.0039	(NS)

Table 12

Comparison of ABLS and LAPS Scores By Age Groups

	N	ABLS Mean	SD	F Prob
60s	38	12.42	2.708	
70s	33	11.82	2.284	.6204
80s	10	12.20	3.084	
	N	LAPS Mean	SD	F Prob
60s	38	58.47	8.19	
70s	33	53.06	13.27	.0870
80s	10	58.20	8.00	

Table 13

Comparison of LAPS Scores By Age Groups With Subjects Who Live Alone and Subjects Who live With Others

		AGE		
		60s	70s	80s
Alone		n=	n=	n=
		(14)	(11)	(5)
	yes	60.29	55.91	58.40
		n=	n=	n=
		(24)	(22)	(5)
	no	57.42	51.64	58.00

Table 14

Analysis of Variance (ANOVA) Of LAPS By Age Groups and Alone Status

Source of Variation	Mean Square	F	Sig of F
Main Effects	246.62	2.180	.097
Alone	178.28	1.576	.213
Age	261.64	2.313	.106
2-Way Interactions	14.39	.127	.881
Alone Age	14.39	.127	.881

Chapter 5

Discussions, Limitations, Recommendations & Implications

Discussions

In this chapter the results of the study are evaluated and interpreted, with respect to the research questions. In addition, a section addressing the relationship to the conceptual framework is discussed. Limitations and potential directions are outlined. The chapter concludes with a brief summary of the major findings and implications of the study.

The purpose of this study was to explore the extent to which attachment with a companion animal in the environment reduces loneliness in community-dwelling elders. It was hoped that by examining the human-animal bond; particularly the concepts of loneliness and attachment, a contribution to existing knowledge could be made in determining whether or not for elders there is a relationship between loneliness and attachment.

Two research questions were generated:

1. Among pet owners, is there a relationship between attachment to companion animals and loneliness?
2. Are there intervening factors such as gender, partnership, ethnic identity and education which mediate the relationship between companion animals and

loneliness?

The underlying hypothesis of this study was that those community-dwelling elders who exhibited strong attachment to their companion animals were less lonely than those elders who exhibited less attachment to their companion animals.

A convenience sample of 81 pet owners was used. The participants completed both the ABLS and the LAPS. The results from the initial data analysis suggested that there was a weak positive relationship between loneliness and attachment that was not statistically significant. Question two was not analyzed because research question one was not supported by the data.

A secondary data analysis was performed taking the extreme groups of the ABLS. The sample was decreased from 81 to 27. When comparing subjects who are least and most lonely, those who are most lonely have higher attachment to their pets. The difference in attachment between the two groups was found to be statistically significant with a two-tailed probability of .041.

Several possible explanations for the results are presented. One possibility could be a challenge to internal validity of the tools used. The ABLS has not been extensively tested with the older adult population. The reliability coefficient for the ABLS was an alpha of .66. There was almost no variance on the ABLS; no item was stronger or weaker. Item variance was .03. Most of the people

answered either 1 or 2 on the ABLIS which indicated that they were not lonely. Another possibility was that the sample did not consist of isolated seniors in their homes which might have expanded the variability of the ABLIS scores. It was hoped that by utilizing three different data collection sites, a segment of the elderly population that was not home bound but perhaps experiencing social isolation would have been identified. One reason for this lack of variability could be social desirability. Since a social stigma is attached to loneliness, individuals may distort their responses in order to appear less lonely. The LAPS was found to have a internal consistency of .92. Inspection of individual items contribution to the reliability suggests that one probably could have easily assessed attachment with a couple of questions. For this sample there was insufficient variability in the LAPS instruments. Most of the subjects were quite attached to their companion animals.

An old adage can be cited to further an understanding of the study results- Which *comes first, the chicken or the egg?* The argument might be stated that people who are attached to their companion animals might not be lonely simply because of that attachment.

In the 1986 study conducted by Goldmeir, findings suggested that the presence of pets is associated with a lower sense of lonely dissatisfaction in elderly

women living alone but that pets may not be as important in this respect when there are other people in the environment. A causal relationship cannot of course, be implied as it is possible that the less lonely person seeks out a pet. This could certainly lend support to the argument that elders are not lonely if they are attached to their pets.

Although the studies by Bath, Krook, Sandquist and Stantze (1976) and Rogers, Hart and Boltz (1992) did not specifically look at the concepts of loneliness and attachment in relationship to pet owners, their studies showed that dogs are credited with initiating opportunities to converse with people (Bath, Krook, Sandquist & Stantze, 1976) and that a dog is considered to be a conversational companion for its elderly owner (Rogers, Hart & Boltz, 1992). Perhaps this is in keeping with the argument stated earlier that pet owners who are attached to their companion animals are not lonely because of the social opportunities the animal provides. Indeed in the study conducted by the Purina Pets for People Program (Green, 1987), companionship was one of the chief values of pet ownership for seniors.

In the (1988) study conducted by Mahalski, Jones and Maxwell, researchers wanted to see whether pet cats helped to assuage feelings of loneliness in elder women. Although objective evidence about social contact indicated that the subjects spent alot of time alone, subjective evidence showed that only six (out

of 40) reported feeling lonely "often" or "almost always". Even though the study itself was noted to have multiple weaknesses, it was felt that perhaps this also lends support to the argument cited earlier which states that pet owners who are attached to their companion animals are not lonely.

Although not part of the original research questions, it is interesting to look at the response of the participants to the first statement on the Lexington Attachment to Pets Scale; My pet means more to me than any of my friends. Forty one percent of the subjects somewhat agreed with that statement as compared to 27% who somewhat disagreed. There were 12% of the subjects who strongly disagreed with that statement as compared to 20% who strongly agreed. These results support the studies conducted by Cusack and Smith, (1984), and Peretti (1988) who found that among the elderly, the emotional and social involvement with the animals can be as great or greater than they might have been with other human beings.

Relationship to Conceptual Framework

The findings in this study support Roy's (1984) Adaptation Model of Nursing. The findings specifically support Roy's assumption that an individual's adaptive ability is influenced by the presence of environmental stimuli. Attachment to a companion animal for those who are most lonely, may be a positive contextual stimulus that helps to reduce loneliness in elders despite the negative

environmental factors to which they are exposed (Calvert, 1988).

In summary, although the initial research question findings of this study were not what was anticipated , various possibilities were cited as feasible explanations. In addition, other questions of interest were examined. This study supports the belief that in exploring the relationship between elders and their pets, particularly in the arena of pet attachment and well-being, the connection can be multifaceted and complex.

Limitations

A major limitation of this study was the use of a convenience sample. There was a sampling population bias which included size and the absence of ethnic or cultural diversity. The findings of this study are necessarily context bound ; results of this study are not generalizable beyond the specific sample from which they were collected.

Another limitation of this study was the exclusive use of self report measures. The major drawback of the self reported method is the potential for deliberate or unconscious distortions on the part of respondents (Polit & Hungler, 1991).

Despite the special measures taken to enhance the accuracy of the sample response, there were some difficulties with instrumentation. Although the

simplified version of the ABLIS was used , some subjects had difficulty interpreting some of the items with the given response choices. This was particularly true for item 5 which states that , I have as many close relationships as I want. Most of the subjects did not feel that the response choices were adequate.

In regard to the LAPS, the statement used to introduce the LAPS items asks respondents to answer questions regarding their "favorite pet". In retrospect, directing respondents to answer regarding their "favorite" may have a social desirability effect, influencing them to answer in a more positive manner than they might otherwise. This may in part account for the inability of the LAPS items to assess weak attitudes. In addition, the LAPS tool is only a useful indicator of pet attachment for both dogs and cats; therefore, examination of other types of pets could not be conducted.

Recommendations for Further Study

The following are suggestions for future studies in this area:

1. This study needs to be replicated with a randomized , more variable sample.
In particular, the inclusion of home bound elders in the sample would be helpful.
2. Descriptions of human/companion animal bonds with varying types of animal pets would further our understanding of this phenomenon.

3. The degree to which pet attachment is a complement to or a substitute for social relationships would extend this line of research.
4. Development of a loneliness tool specifically designed for the elder population.
5. A research study comparing loneliness with pet owners versus non pet owners.

Implications for Nursing Practice

The human/companion animal bond may be functioning in important aspects of elder's lives to relieve loneliness. Because loneliness is a problem commonly encountered in nursing situations, it is vital for nurses to identify and participate in interventions that can help alleviate this problem. Nurses can organize pet programs in situations where loneliness may exist, such as personal care homes, adult day care centers and institutional settings. For visitation pet programs, nurses can collaborate with activity directors in arranging volunteers and scheduling pet visits. They can supervise visits by providing volunteers with resident visitation lists and other information about the resident's preferences for interaction. Nurses can introduce volunteers to clients and actually participate in the pet interaction. Sensitive and non-judgemental assessments of the importance a pet may have in an older person's life along with thoughtful planning may go far to promote the provision of individualized and holistic care for the elderly.

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Appendix A: Human Subjects Approval Letters

UNIVERSITY OF WASHINGTON
Information Statement to Participants

Companion Animal Attachment:
Its Influence Upon The Emotional Well-Being
Of Elders Living In The Community

Frances L. Howe, R.N., BSN: *Graduate Student, Department of Physiological Nursing, 543-8650*

Shawn Elmore, R.N., Ph.D.: *Assistant Professor, Department of Psychosocial Nursing, 543-8564*

You are being asked to voluntarily participate in a study designed to look at the relationship you have with your pet. The purpose of my study is to see how pet ownership affects various aspects of your life.

If you would like to help me in my study, please complete the packet which contains three questionnaires.

1. One of the questionnaires asks for personal information such as age and sex.
2. Another questionnaire which has seven items, asks you to circle the choice that best describes the way you feel. Examples of things I will ask are: *"I feel lonely"* and *"I feel emotionally satisfied in my relationship with people."*
3. The last questionnaire asks you how you feel about your pet. Examples of things I will ask are: *"I believe my pet is my best friend"* and *"My pet knows when I'm feeling bad."*

It should take you no longer than 15 minutes to complete the questionnaires. Please complete the questionnaires here and leave them in the box I provided for you.

Some people may feel uncomfortable answering questions about their relationships with others, but the questions are not expected to cause any undue distress. Although the information that you provide me will help us understand owner's relationships with their pets, there will be no direct benefits to you. You will not receive any money for helping with this study.

Your participation in this study is completely voluntary. You do not have to answer any questions you do not want to and you may refuse to complete the questionnaires at any point without any penalty to you.

The information that you provide will help me finish my Master's Thesis. Because your name will not be on the questionnaire, all your responses will be strictly anonymous. No one will know who filled out the questionnaires. Members of my thesis committee will be the only other people who look at individual questionnaires. You will see, however, that the questionnaires are numbered; this is for analysis purposes only.

All responses to questionnaires will be summarized by groups of persons, not by individuals. A copy of my completed thesis will be available in the University of Washington Library.

Remember, do not put your name on the questionnaire. If you have any questions about this study, please contact me, Frances L. Howe, at the telephone number listed below.

Thank you for your time in assisting with this study.

Frances L. Howe
(206) 743-5563

Frances L. Howe, R.N. Date

Frances L. Howe is a regularly enrolled graduate student at the University of Washington, School of Nursing. Any help you can offer her with this study will be greatly appreciated.

Shawn Elmore, R.N., Ph.D. Date
Assistant Professor
Dept. of Psychosocial Nursing

Appendix B: Letters of Agreement

To: Ann Stevens
Manager
Veterinary Services
BLDG 769
McChord AFB, WA 98438

From: **Frances L. Howe**
Graduate Student
Physiological Nursing Department
University of Washington
Seattle, WA 98195

18 July 1994

Regarding: LETTER OF AGREEMENT

I agree to allow Frances L. Howe, graduate student, University of Washington, to utilize this clinic as a place to distribute data collecting packets for the completion of her study. Included in the packets are a brief description of the study in writing, and three questionnaires which will take approximately 15 minutes to fill out.

Ann Stevens
Manager

Frances L. Howe

To: **Barbara Berry**
10201 East Riverside Dr.
Bothell, WA 98011

From: **Frances L. Howe**
Graduate Student
Physiological Nursing Department
University of Washington
Seattle, WA 98195

5 August 1994

Regarding: LETTER OF AGREEMENT

I agree to allow Frances L. Howe, graduate student, University of Washington, to utilize this clinic as a place to distribute data collecting packets for the completion of her study. Included in the packets are a brief description of the study in writing, and three questionnaires which will take approximately 15 minutes to fill out.

Barbara Berry

Frances L. Howe

To: **Hiliary Duncan**
PETsMART
18820 Hwy 99
Lynnwood, WA 98036

From: **Frances L. Howe**
Graduate Student
Physiological Nursing Department
University of Washington
Seattle, WA 98195

7 August 1994

Regarding: **LETTER OF AGREEMENT**

I agree to allow Frances L. Howe, graduate student, University of Washington, to utilize this facility as a place to distribute data collecting packets for the completion of her study. Included in the packets are a brief description of the study in writing, and three questionnaires which will take approximately 15 minutes to fill out.

Hiliary Duncan

Frances L. Howe

Appendix C: Demographic Questionnaires

Demographic Information *(Please check the following in regard to yourself.)*

1. Your sex?

☐ Male
☐ Female

2. Your age at your last birthday? _____

3. What is your ethnic identity?

☐ Caucasian/Anglo American
☐ Asian-American
☐ African-American
☐ Hispanic
☐ Native American
☐ Other(specify)

4. Do any of the following people live in your home?

A. Spouse/partner

☐ No ☐ Yes

B. Minor child (under age 18)

☐ No ☐ Yes (If yes, How many? _____)

C. Adult children

☐ No ☐ Yes (If yes, How many? _____)

D. Other relatives

☐ No ☐ Yes (If yes, How many? _____ Please
state relationship _____)

E. Friends

☐ No ☐ Yes (If yes, How many? _____)

F. Other (explain)

5. What is your highest grade completed ?

- ☐ Less than high school
- ☐ GED
- ☐ High school diploma
- ☐ Trade or technical school
- ☐ Some college
- ☐ College graduate
- ☐ Post graduate

6. How many cat(s) and/or dog(s) do you own?

- ☐ Cats
- ☐ Dogs

7. How long have you owned your pet?

_____ Years _____ Months

8. Does the pet belong to you or to another member of the family? Please explain.

Appendix D: The Lexington Attachment to Pets Scale

I'd like to ask you whether you agree or disagree with some very brief statements about your favorite pet. For each statement, please tell me if you strongly agree, somewhat agree, somewhat disagree, or strongly disagree.

0 = Strongly Disagree

1 = Somewhat Disagree

2 = Somewhat Agree

3 = Strongly Agree

a. My pet means more to me than any of my friends.

0 1 2 3

b. Quite often I confide in my pet.

0 1 2 3

c. I believe pets should have the same rights and privileges as family members.

0 1 2 3

d. I believe my pet is my best friend.

0 1 2 3

e. Quite often, my feelings towards people are affected by the way they react to my pet.

0 1 2 3

f. I love my pet because he/she is more loyal to me than most of the people in my life.

0 1 2 3

g. I enjoy showing other people pictures of my pet.

0 1 2 3

0 = Strongly Disagree
2 = Somewhat Agree

1 = Somewhat Disagree
3 = Strongly Agree

h. I think my pet is just a pet.

0 1 2 3

i. I love my pet because it never judges me.

0 1 2 3

j. My pet knows when I am feeling bad.

0 1 2 3

k. I often talk to other people about my pet.

0 1 2 3

l. My pet understands me.

0 1 2 3

m. I believe that loving my pet helps me stay healthy.

0 1 2 3

n. Pets deserve as much respect as humans do.

0 1 2 3

o. My pet and I have a very close relationship.

0 1 2 3

p. I would do almost anything to take care of my pet.

0 1 2 3

0 = Strongly Disagree
2 = Somewhat Agree

1 = Somewhat Disagree
3 = Strongly Agree

q. I play with my pet quite often.

0 1 2 3

r. I consider my pet to be a great companion.

0 1 2 3

s. My pet makes me feel happy.

0 1 2 3

t. I feel that my pet is part of my family.

0 1 2 3

u. I am not very attached to my pet.

0 1 2 3

v. Owning a pet adds to my happiness.

0 1 2 3

w. I consider my pet to be a friend.

0 1 2 3

Appendix E: Abbreviated Loneliness Scale

Please circle the choice that best describes the way you generally feel.

The four choices are:

O = Often S = Sometimes R = Rarely N = Never

1. I feel like the people most important to me understand me.

O S R N

2. I Feel Lonely

O S R N

3. I feel like I am wanted by the people/groups I value belonging to.

O S R N

4. I feel emotionally distant from people in general.

O S R N

5. I have as many close relationships as I want.

O S R N

6. I have felt lonely during my life.

O S R N

7. I feel emotionally satisfied in my relationship with people

O S R N

Once again, thank you for your help!